

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application;

--1. (Currently Amended) A digital recording and/or reproducing apparatus comprising:

a reproducing unit for reading out digital data from a first ~~removable~~ disk-shaped optical disk recording medium having a known read out rate at a first transmission rate substantially higher than said known read out rate of said first ~~removable~~ disk shaped optical disk recording medium;

a temporary storage unit directly connected to said reproducing unit and including a hard disk drive for temporarily storing digital data read out by said reproducing unit, wherein said temporary storage unit includes an input/output calculation unit for processing the digital data read out from the reproducing unit with modulation, error correction, and encoding before feeding to said hard disk drive of the temporary storage unit for temporarily storing the digital data;

a recording unit for recording digital data read out from said storage unit in a second ~~removable~~ disk-shaped optical disk recording medium having a known recording rate equal to the readout rate of said first disk-shaped optical disk; and

controlling means for controlling respective operations of said reproducing unit, said temporary storage unit and said recording unit, said controlling means ~~causing~~ controlling said input/output calculation unit to cause the digital data

from said reproducing unit to be written in said hard disk drive of said temporary storage unit at a second transmission rate higher than a the known recording rate of said second ~~removable~~ disk-shaped optical disk recording medium and ~~less~~ lower than said first transmission rate, said controlling means ~~causing~~ controlling said input/output calculation unit to cause the digital data to be read out from said hard disk drive of said temporary storage unit at a ~~third~~ said second transmission rate ~~equal to the known recording rate for said second removable disk recording medium and less than said second transmission rate,~~ and for ~~routing~~ outputting the read out data to said recording unit at said known recording rate of said second disk-shaped optical disk and causing the routed read out data to be recorded in said second ~~removable~~ disk-shaped optical disk recording medium ~~at the known recording rate for said second removable disk recording medium.~~

--2. (Currently Amended) The recording and/or reproducing apparatus according to claim 1 wherein when the reading out operation of said reproducing unit comes to a close, said controlling means causes the read out data to be recorded on said second ~~removable~~ disk-shaped disk recording medium by said recording unit.

--3. (Currently Amended) The recording and/or reproducing apparatus according to claim 1 wherein when the reading out operation from said first ~~removable~~ disk-shaped optical disk recording medium by said reproducing unit comes to a close,

said controlling means causes the read out data to be recorded on said second ~~removable~~ disk-shaped optical disk recording medium.

--4. (Currently Amended) The recording and/or reproducing apparatus according to claim 3 wherein said controlling means halts the recording by said recording unit when said second ~~removable~~ disk-shaped optical disk recording medium is not loaded on said recording unit at a starting time.

--5. (Cancelled)

--6. (Currently Amended) The recording and/or reproducing apparatus according to claim 1 wherein said input/output calculation unit is controlled by said controlling means so that data read out from said hard disc drive of said temporary storage unit is decoded and read out at said third transmission rate equal to the known recording rate for said second ~~removable~~ disk-shaped optical disk recording medium.

--7. (Currently Amended) A digital recording and/or reproducing apparatus comprising:

a reproducing unit including a decoding processing unit for decoding data read out from a first ~~removable~~ disk-shaped optical disk recording medium at a first transmission rate substantially faster than a known readout rate for said first ~~removable~~ disk-shaped optical disk recording medium and for

outputting a playback signal and a first controlling unit for controlling said decoding processing unit;

a temporary storage unit including a hard disk drive for storing data read out from said first ~~removable~~ disk-shaped optical disk recording medium, wherein said storage unit includes an input/output calculation unit for processing the digital data from the reproducing unit with modulation, error correction, and encoding before feeding the digital data at a second transmission rate ~~less~~ lower than said first transmission rate to a hard disk drive of the temporary storage unit for temporarily storing the digital data;

a recording unit including an encoding unit for encoding digital data read out from said hard disk drive of said temporary storage unit and a second controlling unit for controlling said encoding unit, said recording unit storing digital output data from said encoding unit in a second ~~removable~~ disk-shaped optical disk recording medium having a known recording rate equal to the readout rate for said first disk-shaped optical disk; and

a third controlling unit for supplying respective control signals to said first controlling unit and to said second controlling unit to control operation of said reproducing unit and operation of said recording unit, ~~said~~ said third controlling unit supplying a control signal to said input/output calculation unit of said temporary storage unit to read out digital data from said hard disc drive at ~~a third~~ a second transmission rate ~~equal to a known recording rate of said second removable disk recording medium and less than said~~

~~second transmission rate,~~ and for outputting the readout data to said recording unit at said known recording rate of said second disk-shaped optical disk, said third controlling unit sending a control signal to said second controlling unit to cause digital data supplied thereto to be recorded on said second ~~removable~~ disk-shaped optical disk recording medium at the known recording rate for said second ~~removable~~ disk-shaped optical disk recording medium.

--8. (Currently Amended) The recording and/or reproducing apparatus according to claim 7 wherein said third controlling unit causes digital data to be read out from said temporary storage unit after an end of the reproducing operation of said first ~~removable~~ disk-shaped optical disk recording medium by said reproducing unit to route the read out data to said recording unit, the read out data being recorded by said recording unit on said second ~~removable~~ disk-shaped optical disk recording medium.

--9. (Currently Amended) The recording and/or reproducing apparatus according to claim 7 wherein, when the data recording start time point is previously set in said second ~~removable~~ disk-shaped optical disk recording medium, said third controlling unit causes digital data to be read out from said hard disk drive of said temporary storage unit when the time is at the data recording start time point to route the read out data to said recording unit to cause the read out

data to be recorded on said second ~~removable~~ disk-shaped optical disk recording medium.

--10. (Currently Amended) The recording and/or reproducing apparatus according to claim 7 wherein, when said second ~~removable~~ disk-shaped optical disk recording medium is not loaded on said recording unit and the time is the data recording start time point, said third controlling unit halts the recording operation of said second ~~removable~~ disk-shaped optical disk recording medium.

--11. (Cancelled)

--12. (Currently Amended) The recording and/or reproducing apparatus according to claim 7 wherein said input/output calculation unit is controlled by said third controlling unit so that digital data read out from said temporary data storage unit is processed with further decoding so that the data is read out at the third transmission rate equal to the known recording rate of said second ~~removable~~ disk-shaped optical disk recording medium.

--13. (Currently Amended) A digital recording and/or reproducing apparatus comprising:

a reproducing unit for reading out digital data from a first ~~removable~~ disk-shaped optical disk recording medium at a first transmission rate substantially higher than a known readout rate of said first removable disk recording medium;

a temporary data storage unit including a hard disk drive for storing data read out by said reproducing unit, wherein said storage unit includes an input/output calculation unit for processing the digital data from the reproducing unit with modulation, error correction, and encoding before feeding the digital data at a second transmission rate ~~less~~ lower than said first transmission rate to said hard disk drive of the temporary data storage unit for temporarily storing the digital data;

a recording unit for recording digital data read out from said temporary storage unit in a second removable disk recording medium having a known recording rate equal to the readout rate of said first disk-shaped optical disk; and

controlling means for controlling respective operations of said reproducing unit, said temporary data storage unit and said recording unit, said controlling means ~~causing~~ controlling said input/output calculation unit to cause data to be read out from said temporary data storage unit, at a ~~third said second~~ transmission rate ~~equal to a known recording rate for said second removable disk recording medium and less than said second transmission rate,~~ and supplied for outputting the readout data to said recording unit for recording thereon, at the known recording rate for said second removable disk-shaped optical disk recording medium, after all of the data read out from the first removable disk recording medium is stored in said hard disk drive of said temporary data storage unit.

--14. (Currently Amended) The recording and/or reproducing apparatus according to claim 13 wherein said controlling means causes the digital data to be read out from said hard disk drive of said temporary storage unit and routed to said recording unit and when the reading out operation of said first ~~removable~~ disk-shaped optical disk recording medium by said reproducing unit comes to a close, said controlling means causes the read out data to be recorded on said second ~~removable~~ disk-shaped optical disk recording medium by said recording unit.

--15. (Currently Amended) The recording and/or reproducing apparatus according to claim 13 wherein said controlling means causes digital data to be read out from said hard disk drive of said temporary storage unit and when the reproducing operation for said first ~~removable~~ disk-shaped optical disk recording medium by said reproducing unit comes to a close, said controlling means causes the read out data to be recorded on said second ~~removable~~ disk-shaped optical disk recording medium.

--16. (Currently Amended) The recording and/or reproducing apparatus according to claim 15 wherein, when a time is a starting time and the second ~~removable~~ disk-shaped optical disk recording medium is not loaded on said recording unit, said controlling means halts the recording operation of said recording unit.



--17. (Cancelled)

--18. (Currently Amended) The recording and/or reproducing apparatus according to claim 13, wherein said input/output calculation unit is controlled by said controlling means so that data read out from said hard disk drive of said data storage unit is decoded and read out at a the third transmission rate equal to the predetermined recording rate for said second ~~removable~~ disk-shaped optical disk recording medium.

--19. (Currently Amended) A digital recording and/or reproducing apparatus comprising:

a reproducing unit for reading out digital data from a first ~~removable~~ disk-shaped optical disk recording medium at a first transmission rate substantially faster than a known readout rate of said first ~~removable~~ disk-shaped optical disk recording medium;

a temporary data storage unit including a hard disk drive for temporarily storing digital data read out from said reproducing unit, wherein said data storage unit includes an input/output calculation unit for processing the digital data from the reproducing unit with modulation and error correction and encoding before feeding the digital data at a second transmission rate ~~less~~ lower than said first transmission rate and higher than the known readout rate of said first disk-

shaped optical disk to said hard disk drive of the temporary data storage for temporarily storing the digital data;

a recording unit for recording said digital data read out from the temporary data storage unit in a second ~~removable~~ disk-shaped optical disk recording medium having a known recording rate equal to the readout rate of said first disk-shaped optical disk; and

controlling means for controlling said reproducing unit, said temporary data storage unit and said recording unit, said controlling means operating so that, when a data recording starting time point is previously set on said second ~~removable~~ disk-shaped optical disk recording medium, said controlling means controls said input/output calculation means to read out data is read out from said hard disk drive of said temporary data storage unit, ~~at a third~~ said second transmission rate equal ~~to a known recording rate for said recording medium and less than said second transmission rate,~~ and routed to output the readout data to said recording unit at the known recording rate for said second disk-shaped optical disk when a time is the recording starting time point, with the read out data being recorded on said second ~~removable~~ disk-shaped optical disk recording medium at the known recording rate for said second ~~removable~~ disk-shaped optical disk recording medium.

--20. (Currently Amended) The recording and/or reproducing apparatus according to claim 19 wherein, when said second ~~removable~~ disk-shaped optical disk recording medium is not loaded on said recording unit and the time is the

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recording starting time point, said controlling means halts the recording operation of said recording unit.